

1. (Currently Amended) A computer program product embodied on a computer-readable medium and comprising code that, when executed, causes a computer to model and analyze a plurality of computing workloads, the code comprising:

a data collection module configured to dynamically populate a measurement object in response to a polling inquiry from a modeling module, the measurement object comprising updated gather performance data associated with the operation of a computer system, the computer system comprising at least one physical processor and physical storage, the computer system executing a plurality of computing workloads;

a wherein the modeling module is configured to execute a plurality of models that use the gathered performance data wherein the modeling module is further configured such that output data from a first model serves as input data for a second model in a hierarchy of models;

a data analysis module configured to present analysis data compiled from the modeling module; and

a framework configured to manage the data collection module, the modeling module, and the data analysis module in response to a predefined data and model flow.

2. (Previously Presented) The computer program product of Claim 1, wherein the framework is configured to selectively operate a predefined data collection module or a user-defined data collection module in response to the predefined data and model flow.

3. (Previously Presented) The computer program product of Claim 1, wherein the framework is configured to selectively operate a predefined model or a user-defined model in response to the predefined data and model flow.

4. (Previously Presented) The computer program product of Claim 1, wherein the framework is configured to selectively operate a predefined data analysis module or a user-defined data analysis module in response to the predefined data and model flow.

5. (Previously Presented) The computer program product of Claim 1, wherein the framework is integrated within a predefined user interface.

6. (Previously Presented) The computer program product of Claim 1, wherein the framework is integrated within a third-party application.

7. (Canceled).

8. (Previously Presented) The computer program product of Claim 1, wherein the modeling module is further configured to execute a plurality of models in parallel.

9. (Previously Presented) The computer program product of Claim 1, wherein the framework is configured to implement the predefined data and model flow at least in part by defining a workload software object from a persistent data structure, the workload software object comprising parameters for the data collection module, modeling module, and data analysis module.

10. (Previously Presented) The computer program product of Claim 1, further comprising an editor configured to allow a user to define and store the predefined data and model flow.

11. (Previously Presented) The computer program product of Claim 1, wherein the at least one model is selected from the group of models consisting of a workload prediction model, a performance analysis model, an optimization model, and a user-defined model.

12. (Currently Amended) A computer program product for a software editor for defining, revising, and storing a data and model flow for modeling and analyzing a plurality of computing workloads, the computer program product embodied on a computer-readable medium and comprising computer-executable code that, when executed comprises:

an identification module for gathering an identifier for a data and model flow;
a measurement module for designating a data collection module configured to

dynamically populate a measurement object in response to a polling inquiry from a modeling module, the measurement object comprising updated gather performance data associated with the operation of a computer system, the computer system comprising at least one physical processor and physical storage, the computer system executing a plurality of computing workloads;

wherein the a modeling module designates for designating a plurality of models that use the gathered updated performance data wherein the modeling

module is further configured such that output data from a first model serves as input data for a second model in a hierarchy of models; a metric map for defining model variables required to analyze analysis data compiled from the at least one model; a plot module for designating a data analysis module configured to present analysis data compiled from the at least one model.

13. (Previously Presented) The computer program product of Claim 12, further comprising a storage module configured to store and retrieve the data and model flow from a persistent data structure.

14. (Previously Presented) The computer program product of Claim 13, wherein the persistent data structure comprises an eXtensible Markup Language (XML) file.

15. (Previously Presented) The computer program product of Claim 13, wherein the persistent data structure comprises a database.

16. (Currently Amended) A system for modeling and analyzing computing operations for a computer system, comprising:

a computer system for which computer workloads are to be monitored and analyzed, the computer system comprising at least one physical processor and physical storage, the computer system executing a plurality of computing workloads;

a computer program product embodied on a computer-readable medium and comprising code that, when executed, causes a computer to implement a data collection module in communication with the computer system and configured to dynamically populate a measurement object in response to a polling inquiry, the measurement object comprising updated gather performance data associated with the operation of the computer system;

a computer program product embodied on a computer-readable medium and comprising code that, when executed, causes a computer to implement a run-time manager configured to periodically poll the data collection module by issuing the polling inquiry and in response to the data collection module providing the gathered performance data in the form of the measurement object, execute two or more models in a workload module associated with the gathered performance data wherein output data from a first model serves as input data for a second model in a hierarchy of models; and

a computer program product embodied on a computer-readable medium and comprising code that, when executed, causes a computer to implement a data analysis module configured to present analysis data compiled from the workload module in response to an event.

17. (Original) The system of Claim 16, further comprising a user interface configured to execute one or more workload modules within the run-time manager in response to a user

request, each workload modules defining a data and model flow specifically designed for the computer system, the data and model flow defined within a persistent data structure.

18. (Original) The system of Claim 16, wherein the event comprises analysis data that fails to satisfy a threshold value.

19. (Original) The system of Claim 16, wherein the event comprises a user request for analysis data, the data analysis module presenting the analysis data to a user by way of a user-definable plotting module.

20. (Original) The system of Claim 16, further comprising an event handler that executes a predefined action in response to the event.

21. (Currently Amended) A computer program product embodied on a computer-readable medium and comprising code that, when executed, causes a computer to implement an application programming interface (API) for real-time modeling and analyzing of computing workloads, comprising:

a measurement software class configured to dynamically populate a measurement object in response to a polling inquiry from an instance of a run-time manager software class, the measurement object comprising updated
gather performance data associated with the operation of a computer system, the computer system comprising at least one physical processor
and physical storage, the computer system executing a plurality of
computing workloads;

a workload software class that defines a data and model flow associated with the computer system, the workload software class comprising two or more model software classes that utilize the gathered performance data to model attributes of the computer system wherein output data from a first model serves as input data for a second model in a hierarchy of models; and wherein the a run-time manager software class is configured to periodically poll for measurement objects instantiated from the measurement software class and execute one or more model objects instantiated from the one or more model software classes in response to the data and model flow defined by one or more workload objects.

22. (Previously Presented) The computer program product of Claim 21, further comprising a real-time interface module configured to start and stop execution of one or more workload objects.

23. (Previously Presented) The computer program product of Claim 21, wherein the interface is further configured to present analysis data compiled by a plot object instantiated from a plot class, the analysis data associated with a specific workload object identified by a user.

24. (Currently Amended) A computer program product embodied on a computer-readable medium and comprising code for modeling and analyzing a plurality of computing workloads that, when executed, causes a computer to perform the following:

dynamically populating a measurement object in response to a polling inquiry from a modeling module, the measurement object comprising updated

gather performance data associated with the operation of a computer system, the computer system comprising at least one physical processor and physical storage, the computer system executing a plurality of computing workloads;

executing a plurality of models that use the gathered performance data wherein the modeling module is further configured such that output data from a first model serves as input data for a second model in a hierarchy of models;

presenting analysis data compiled from the at least one model; and

providing a framework configured to manage the gathering of performance data, the execution of the at least one model, and the presentation of the analysis data in response to a predefined data and model flow.

25. (Previously Presented) The computer program product of Claim 24, wherein the framework is executed from within a third-party application.

26. (Currently Amended) A computer program product embodied on a computer-readable medium and comprising code for modeling and analyzing a plurality of computing workloads that, when executed, causes a computer to perform the following:

dynamically populating a measurement object in response to a polling inquiry from a modeling module, the measurement object comprising updated gather performance data associated with the operation of a computer system, the computer system comprising at least one physical processor

and physical storage, the computer system executing a plurality of computing workloads;

executing a plurality of models that use the gathered performance data wherein the modeling module is further configured such that output data from a first model serves as input data for a second model in a hierarchy of models;

presenting analysis data compiled from the at least one model; and

providing a framework configured to manage the gathering of performance data, the execution of the at least one model, and the presentation of the analysis data in response to a predefined data and model flow.

27. (Canceled).

28. (Currently Amended) A computer program product embodied on a computer-readable medium and comprising code for modeling and analyzing a plurality of computing workloads that, when executed, causes a computer to perform the following:

specify a data and model flow for monitoring a computer system;

invoke a modeling and analysis utility, wherein the data and model flow defines performance data that is ~~collected~~ dynamically populated in a measurement object in response to a polling inquiry from a modeling module, the measurement object comprising updated performance data associated with the operation of a computer system, the computer system comprising at least one physical processor and physical storage, the

computer system executing a plurality of computing workloads, and
models that are executed periodically using the performance data to
compile analysis data representative of results from one or more of the
models wherein output data from a first model serves as input data for a
second model in a hierarchy of models; and
receive a real-time graphical representation of the analysis data from the modeling
and analysis utility, in response to an event.

29. (Previously Presented) The computer program product of Claim 28, wherein the
event comprises analysis data that fails to satisfy a threshold value.

30. (Previously Presented) The computer program product of Claim 28, wherein the
event comprises a user request, the modeling and analysis utility presenting the graphical
representation of the analysis data to a user by way of a user-defined plotting module.